

Translation of Amended Pages

5 Claims

- 10 1. An electronic module, in particular a multichip module, comprising a multilayer wiring having at least one IC component applied on the component side thereof, said module being unilaterally covered on the component side with a hermetic case, and comprising contact pads on the bottom side of the module through which contacting and integration of the module to a next higher assembly group level can be established, the bottom side of the multilayer wiring (2) constituting directly, i.e. without additional wiring substrate (1), the bottom side of the module,
- 15 characterized in
- 20 that the component side of the multilayer wiring (2) adheres to the hermetic case (4) with its portions that are free from components, said hermetic case (4) being formed by plastics overmolding, and in that the multilayer wiring (2) has a height of less than approx. 100  $\mu\text{m}$ .
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2. A module according to claim 1,
- 30 characterized in that the multilayer wiring (2) is constituted by a sequence of structured metal planes (12) which are electrically separated from each other by insulating layers (11) and between which purposeful electric connections are established through vias.
- 35 3. A module according to claim 1 or 2,
- characterized in that, for establishing contact with the next assembly group level, solderable material

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40 (7, 9), in particular solder balls (7), are applied to the contact pads (6) on the bottom side of the multilayer wiring (2) which are electrically connected to the component level through vias.

4. A method of making an electronic module according to claim 1, in which

45 - a multilayer wiring (1) having contact pads (6) on the bottom side thereof is applied only to the top side of a plate-shaped wiring substrate (1) of rigid material

50 - IC components and additional electronic components (3), respectively, are electrically and mechanically connected to the component level of the multilayer wiring (2),

55 - the component side of the multilayer wiring (2) is provided with a hermetic case (4) adhering in the portions thereof that are free from components,

60 - and the rigid substrate material is removed again thereafter and the bottom side of the multilayer wiring (2), which constitutes the bottom side of the module, is exposed,

characterized in

that said hermetic case is formed by unilateral plastics overmolding.

5. A method according to claim 4,

65 characterized in that, prior to removal of the in particular metallic substrate material in portions located underneath the contact pads (6), pits (8) are etched into the wiring substrate (1) from the bottom side, with solderable material (7, 9) being introduced into said pits (8) thereafter.

70 6. A method according to claim 4 or 5,

characterized in that the removal of the in particular metallic substrate material takes place by dissolution of the same.

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7. A method according to claim 6, characterized in that the dissolution takes place by wet chemical etching.

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8. A method according to claim 4 or 5, characterized in that the removal of the substrate material takes place by stripping the wiring substrate (1) from the multilayer wiring (2).

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